

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (previously amended) A process for forming a silicon carbide structure, comprising:
forming a mixture of a silicon precursor powder, a cross-linking thermoset resin and a silicon-containing filler selected from powder of the group consisting of silicon carbide, silicon nitride and silicate materials;
compression molding the mixture to form a rigid structure;
carbonizing the rigid structure in an inert atmosphere at a temperature in a range from about 700 to 1000°C to convert the cross-linking thermoset resin to carbon; and
heating the rigid structure in an inert atmosphere to a temperature in a range from about 1400 to 1800°C to allow the carbon to react with silicon in the rigid structure to form silicon carbide.
2. (original) The process of claim 1, wherein a mean particle size of the silicon precursor powder ranges from about 1 to 100 µm.
3. (original) The process of claim 1, wherein a mean particle size of the silicon precursor powder ranges from about 5 to 50 µm.
4. (original) The process of claim 1, wherein the mixture comprises about 10 to 60% by weight of the silicon precursor powder.
5. (original) The process of claim 1, wherein the mixture comprises about 10 to 60% by weight of the cross-linking thermoset resin.
6. (original) The process of claim 1, wherein the mixture exhibits a carbon to silicon atomic ratio of about 1:1.
7. (original) The process of claim 1, wherein the cross-linking thermoset resin has a carbon yield of at least 20% by weight.

8. (original) The process of claim 7, wherein the cross-linking thermoset resin is a phenolic resin.

9. (canceled)

10. (previously amended) The process of claim 1, wherein the silicon-containing filler is silicon carbide.

11. (currently amended) The process of claim 9~~1~~, wherein the mixture comprises 10 to 75% by weight of the silicon-containing filler.

12. (currently amended) The process of claim 9~~1~~, wherein a mean particle size of the silicon-containing filler is in a range from 1 to 100 μm .

13. (original) The process of claim 1, further comprising adding a pore-forming filler to the mixture prior to molding the mixture.

14. (original) The process of claim 13, wherein the pore-forming filler is added in an amount ranging from about 1 to 15% by weight.

15. (original) The process of claim 1, further comprising adding an organic fibrous filler to the mixture prior to molding the mixture.

16. (original) The process of claim 15, wherein the organic fibrous filler is added in an amount ranging from about 1 to 15%.

17-36 (canceled)